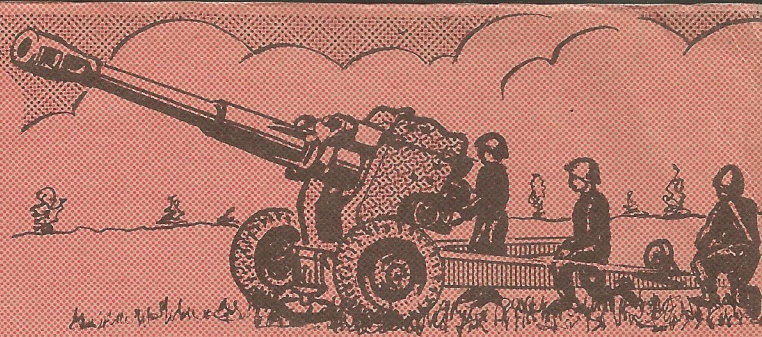
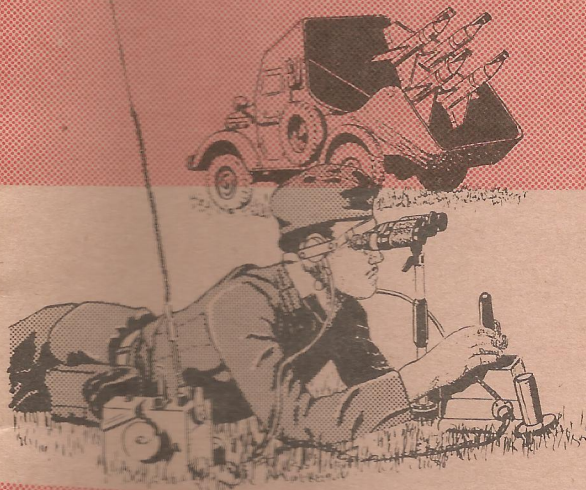


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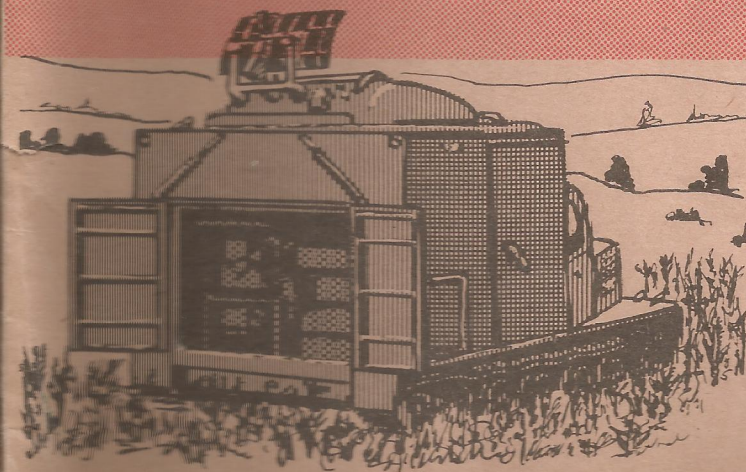
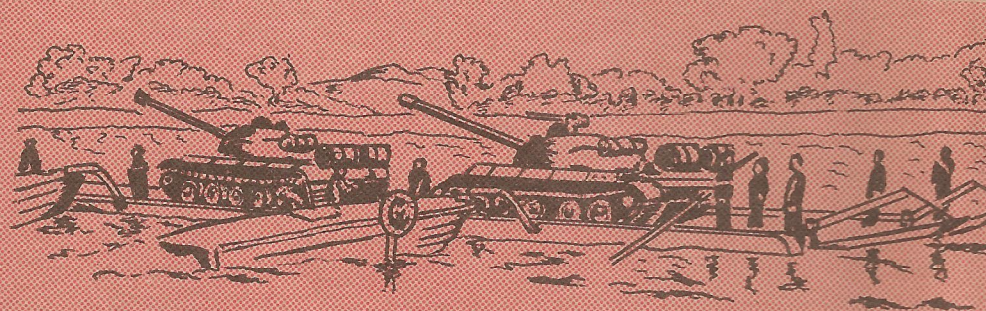
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ARMY TECHNICAL INTELLIGENCE 098 REVIEW



OCTOBER 1969



№95

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ARMY TECHNICAL INTELLIGENCE REVIEW No 95 (SECRET)

OCTOBER 1969

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ARMY TECHNICAL INTELLIGENCE REVIEW No 95 (SECRET)

FOREWORD

1. There have been two changes of staff in the branch since we last wrote. The first is the departure of Major Dick Patterson back to Canada, his replacement at the Infantry/Airborne desk by Major Rex Clark from Australia, who had the Engineer desk and the takeover of the latter by Major Sam Dunbar who comes to us from Canada via BAOR. Secondly Molly Wood has replaced Colin May as the EO in Co-ord.
2. We gather that some readers are getting confused over the numbering system of our publications and they may think they have lost, or not received, all their copies. We would remind you that, beginning with issue No 90 Restricted, we switched to quarterly alternate issues of Secret and Restricted Reviews. Thus No 91 was Secret, No 92 Restricted, No 93 Secret, No 94 Restricted and this issue is No 95 Secret. The distribution of the two issues is obviously not the same. So you have not lost or missed one after all!
3. Before the next issue comes out two further staff changes will have occurred. Major Ian Harper goes to the Ordnance Board on promotion in January to be replaced by Major David Corsellis. On Christmas Day I receive a nice present in the shape of retirement. Colonel Stewart Smith succeeds me and I wish him well in what I believe to be one of the most fascinating jobs in the MOD. It has been a privilege to enjoy it for 3 years.



A.D. NELSON
Colonel
Tech Int(A)

Corrigendum:

ATIR No 93

R-123

Page 33 Line 19 delete "VR-26" and substitute "BP-26".

Nomenclature List

The revised list, in its new format, is not ready for inclusion in this October Edition of ATIR.

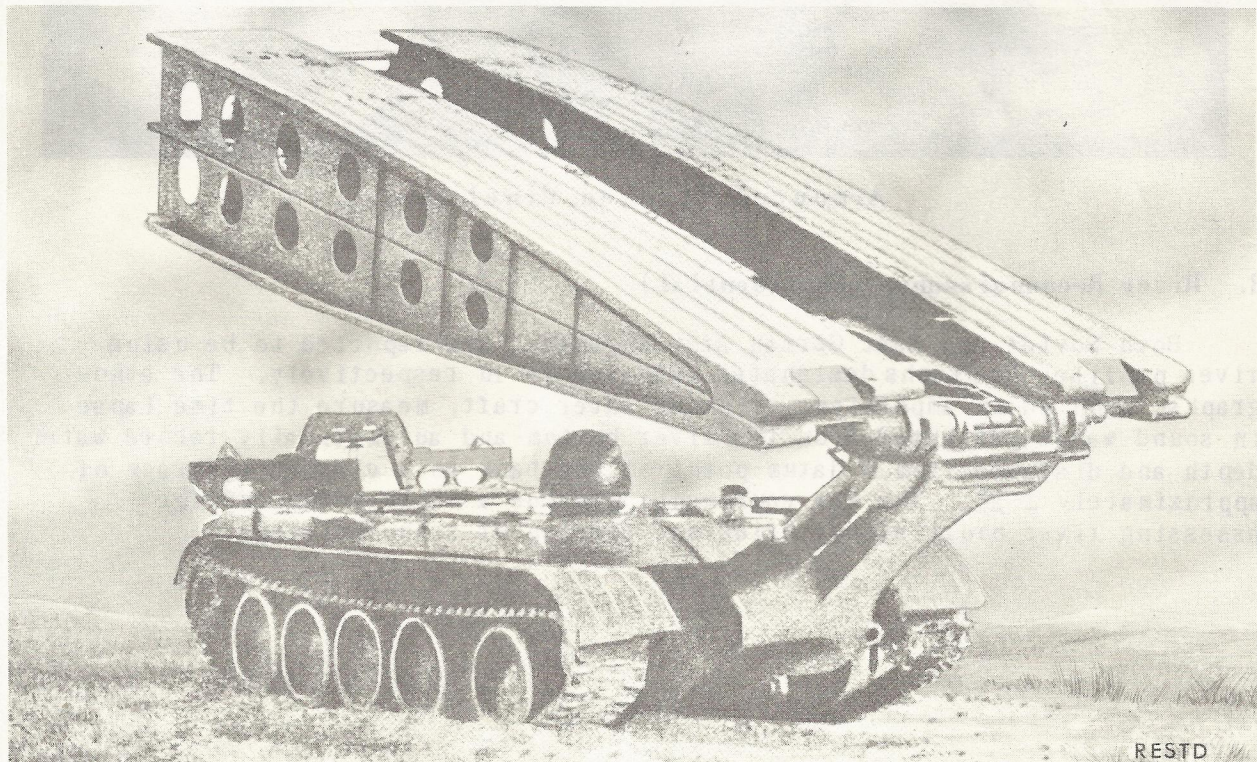
Separate advance copies will be distributed as soon as possible.

1. Recent Soviet Bloc Engineer Developments (SECRET)

1. New Czechoslovak MT-55 Assault Bridge (Confidential)

The MT-55 scissors bridge, first reported on 4th May 1968, is an apparent modification of the T-34 tank-launched scissors bridge which has been in service since 1960. This newer model is mounted on a T-55 tank chassis and differs from the T-34 bridge in the road surface and tapered end of the treadways. The automatic electro-hydraulic system which controls the hydraulic laying mechanism is programmed to lay the bridge in 1½-2 minutes. Laying can also be controlled manually if the automatic system fails. In the event of tank engine failure the tank battery will provide enough power to operate the electro-hydraulic systems and lay the bridge. Although details of the MT-55 are not yet known, a comparison of its estimated characteristics with the T-34 bridge are shown below. The major improvement is the T-55 chassis.

	T-34 Bridge	MT-55 Bridge (Estimated)	
Launching Time	3-5 min	1½-2 min	
Length	55.8 ft (17m)	60 ft	(18.2m)
Width	10.2 ft (3.1m)	10.5 ft	(3.2m)
Height	3.3 ft (1.01m)	3.5 ft	(1.06m)
Class	55	60	

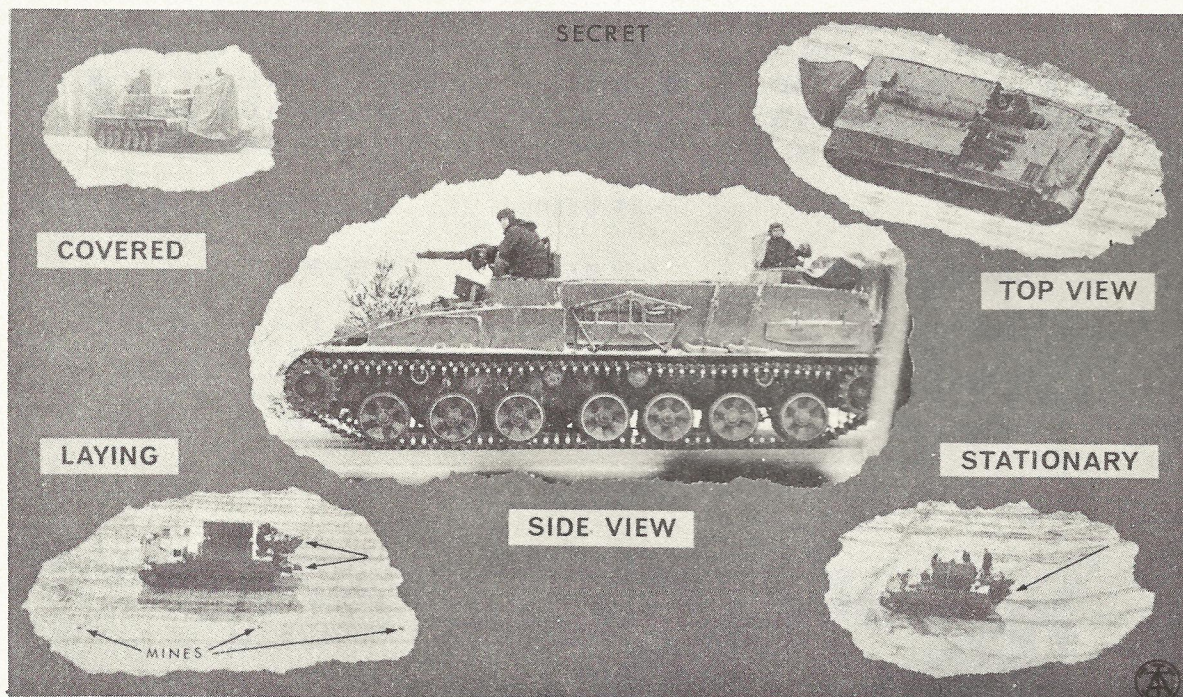


MT-55 Assault Bridge

2. Armoured Tracked Minelayer (Secret)

a. Since our last reporting of this equipment in ATIR No 82 of Jul 66 and in the ATIR Supplement No 83 of Oct 66, some uncovered views of the minelayer have been obtained but we still have no firm data on performance.

b. The photography shows several views of the vehicle in stationary and working modes. Note that in the lower left view mines are being surface laid on presumably frozen ground and the hydraulically operated plough apparatus is in a raised position.



Armoured Tracked Minelayer

3. River Reconnaissance (Confidential)

Both Soviet and East German Army Engineers are reported to be using river profile echographs designated IREL and FP-10 respectively. The echographs, mounted in amphibians or other water craft, measure the time lapse in sound waves reflected from the river bottom and automatically record water depth and distance from a datum point on the bank to a claimed accuracy of approximately $\pm 2\%$. The new equipments provide a rapid technique for assessing river profiles for bridging, fording or schnorkelling.

4. Soviet Heavy Barge Bridge (Confidential)

The Soviets have developed a bridge for use in rear areas using barges of about 600 ton capacity which can otherwise be used for normal freight. End coupling of the specially designed barges, as seen in the photograph, results in a sturdy deck bridge capable of carrying high load class single lane traffic. Since a large proportion of the river cross section is obstructed, problems in anchorage will occur.



Soviet Heavy Barge Bridge

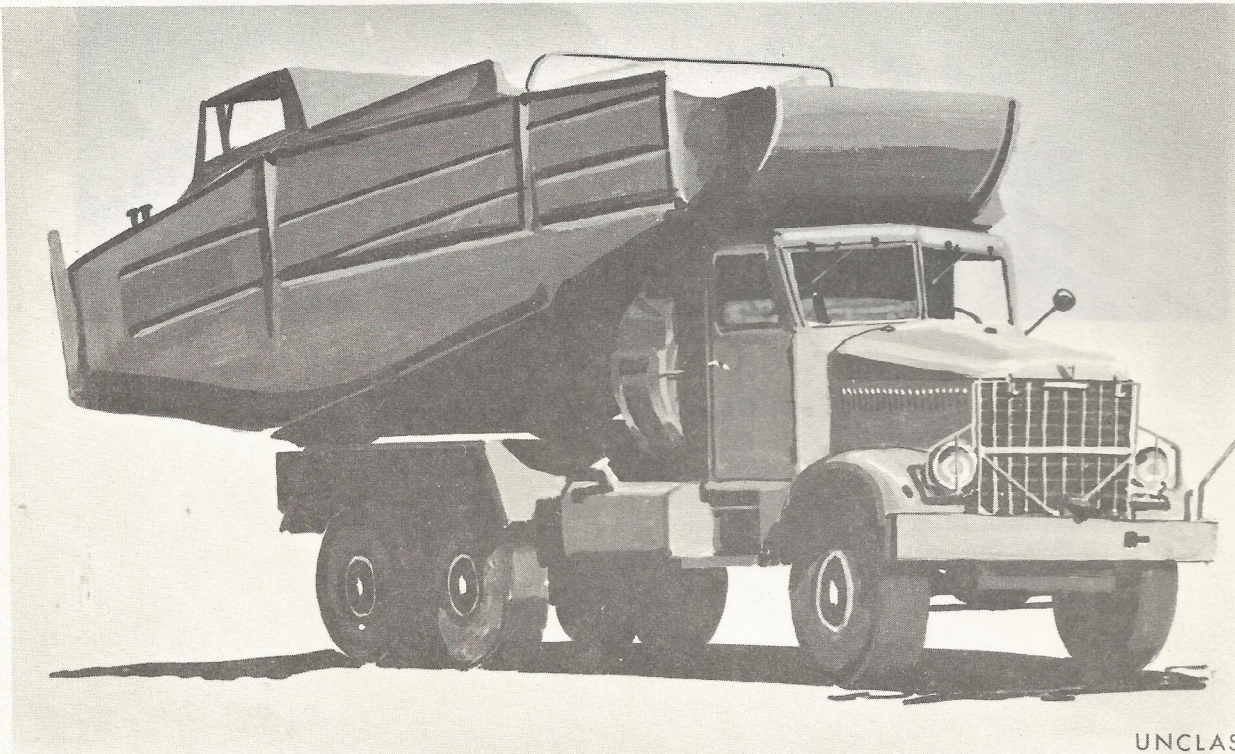
5. Powerboat BMK-T (Confidential)

The BMK-T is a new Soviet powerboat which differs greatly in both appearance and in concept from the other known models. It can tow, but is primarily designed as a pusher. Identified with the PMP heavy folding pontoon bridge set, the BMK-T is carried on a specially modified KRAZ-214 (6x6) truck instead of being towed as a trailer.

It is launched into the water in a fashion similar to a TPP or PMP pontoon.

Characteristics

Length	8.6 m (28.2 ft)
Beam	2.7 m (8.9 ft)
Depth	2.2 m (7.2 ft)
Draft	0.75 m (2.46 ft)
Engine	130 HP
Maximum speed	17 km/h (10.6 mph)
Towing capacity forward	2,000 kg (4,410 lbs)
reverse	750 kg (1,654 lbs)
Crew	two



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BMK-T Powerboat

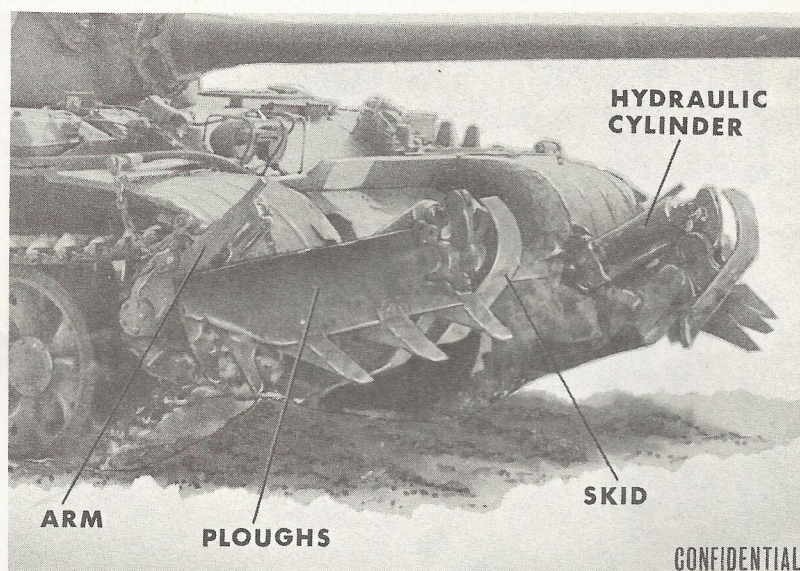
6. Soviet Mine Clearance Ploughs (Confidential)

Additional information since our article in Review No 93.

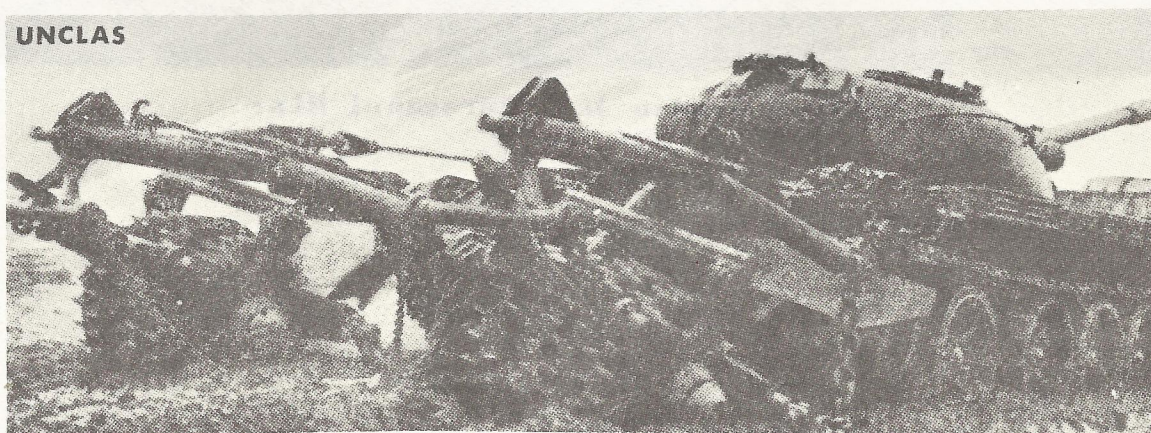
More important sightings include:

- a. A Regiment, probably 26 GTD all equipped with ploughs were seen in GSFG.
- b. T-55 fitted with ploughs in a depot in Hungary.
- c. Further sightings in Czechoslovakia.
- d. Combined mineroller and ploughs appeared in Polish press.

The fitting of tanks with ploughs gives the Soviet Forces the ability to breach rapidly on a wide front. This appears to fit their concept of rapid advance. The press cutting of the combined roller/plough is a possible trial equipment which if successful could come into limited use. It is not anticipated that the combination will become standard breaching equipment as the tank would lose much of its mobility.



Mine Clearance Ploughs on T-55



Combined Mineroller and clearance ploughs

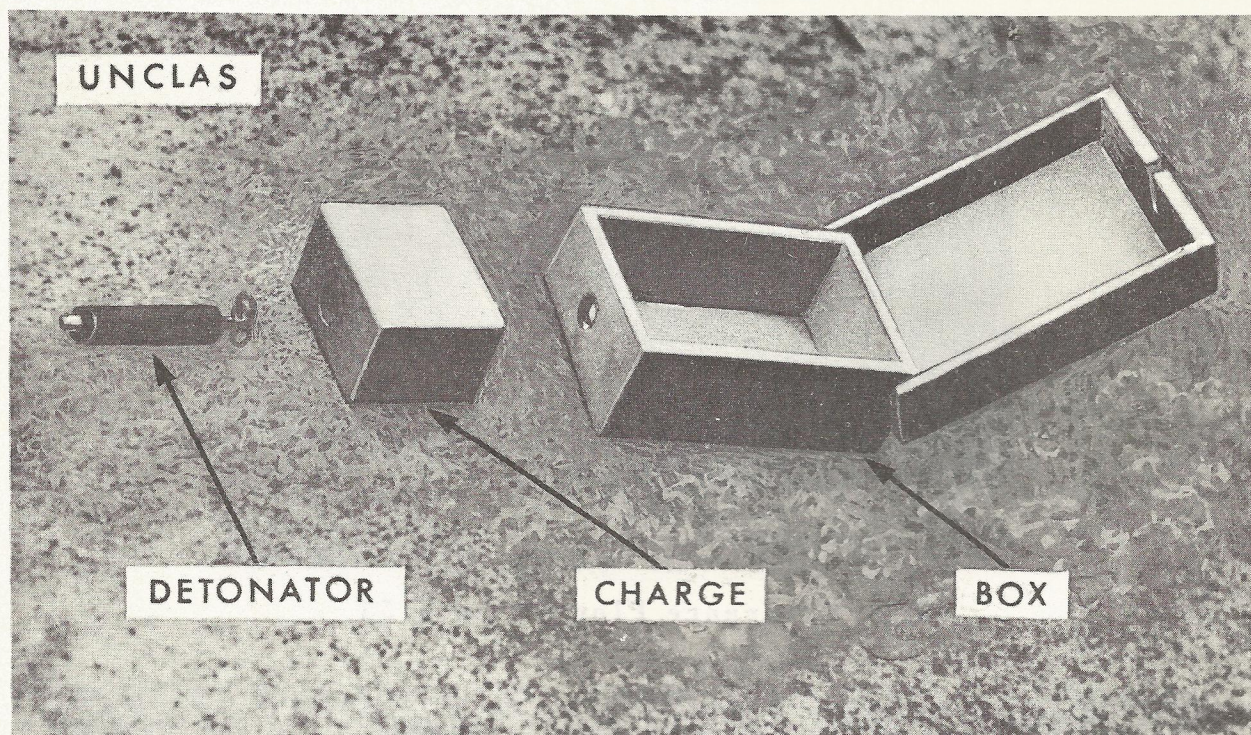
2.Czech Anti-Personnel Mine (CONFIDENTIAL)

Czechoslovakian Anti-Personnel Mine, Wooden PP Mi-D (Confidential)

This mine can be either surface laid or buried and will explode when a pressure of 8.8 lbs is applied. A description of the mine is as follows:-

Mine Case	-	Wooden box
Blasting charge (pressed trotyl)	-	200 g (0.44 lbs)
Weight of mine with charge	-	0.5 kg (1.1 lbs)
Packing	-	20 per crate.

The mine has been reported in IRAQ.



PPMi-D Wooden Anti Personnel Mine

3. Yugoslav Anti-Tank Gun (RESTRICTED)

82 mm Recoilless Anti Tank Gun M60 (Restricted)

Producing Country : Yugoslavia

Description : The M60 is a light mobile anti-tank weapon which could be used by infantry or motorised troops and fires a fin-stabilised projectile. It can be used against tanks or other ground targets.

Characteristics

Type and calibre	Anti-tank, 82 mm
Dimensions:	
Length of weapon	2.20 m (47 inches)
Weight	122 kg
Effective range	1,400 m (against fixed targets) (1550 yds)
	1,000 m (against moving targets) (1100 yds)
Rate of fire :	4-5 shots per minute
Initial velocity	380 metres per second (1300 ft/sec)
Method of operation :	Recoilless chamber type (hollow cartridge)
Loading	Singly, by hand
Ammunition used	HEAT (7.2 kg)
For heavy arms and multiple complexes	
- Aiming sectors	Direction 360°; elevation from -20° to +35°
Identifiable characteristics	The weapon is mounted on a single axle carriage with disc wheels

Note: It appears that the weapon in question, which is a Yugoslav product, is already being supplied to units. The extent of its distribution is not, however, known.



M-60 Ready for Action

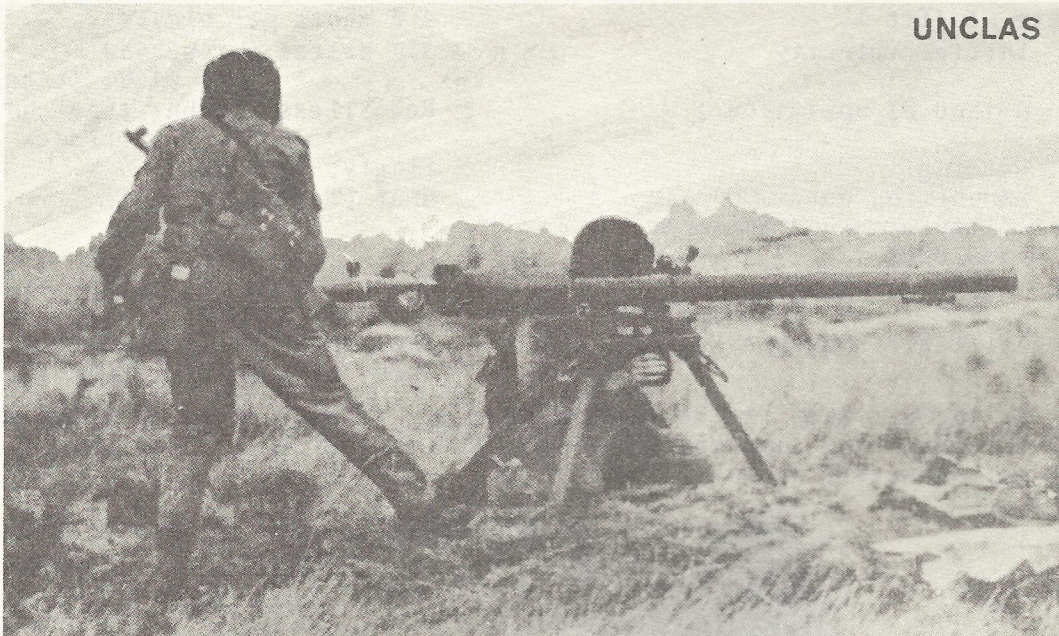
4. Soviet Recoilless Gun (SECRET)

75 mm Recoilless Gun B-M-1968(?) (Secret)

Recent press photography from the USSURI river battle, and a defectors report have given additional information on the RCL B-M-1968 details of which appeared in Tech Int Review No 93. The rifle located over the barrel shown in the previous photos is probably a training device as it does not appear in the battle photography.

Lack of sightings of the Soviet 57 mm anti tank gun coupled with a defector's report indicates that the RCL B-M-1968(?) will enter service at battalion level with Airborne and Motor Rifle formations.

Two possible designations have been observed that could apply to this weapon - "B-14" "SPG-9". We need confirmation of these designations as well as information on ammunition and gun performance.



75 mm Recoilless Gun B-M-1968(?)

5. Yugoslav Recoilless Rifle (CONFIDENTIAL)

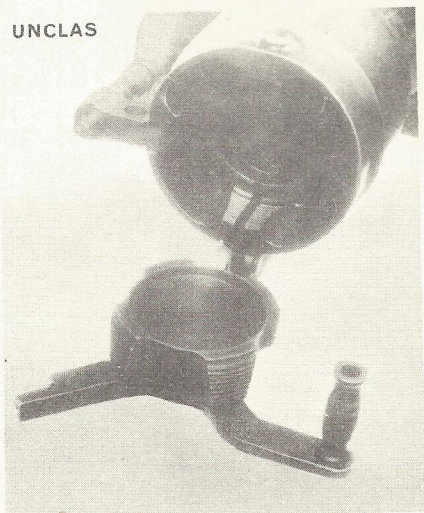
105 mm Yugoslav Recoilless Rifle M65 (Confidential)

Recent information received on the 105 mm M65 rifle produced by Yugoslavia states that the rifle can be used in a variety of roles against tanks AFVs and fortifications. The weapon has a spotting rifle UB-12.7 mm which uses tracer at ranges of 600 m to 1000 m. The trajectories are matched at a range of 1000 m. It can be towed, carried in a vehicle or animal packed. It has a detachment of 3.

Stated Characteristics

Calibre	-	105 mm
Ranges	-	6000 m (6,500 yds) (indirect fire)(details unknown)
	-	1000 m (1100 yds) (stationary targets)
	-	600 m (650 yds) (moving anti tank targets)
Rate of Fire	-	6 rounds per minute
Muzzle velocity of shell	-	455 m/sec (1500 ft/sec)
Muzzle velocity of shell spotting	-	
MG	-	500 m/sec (1640 ft/sec)
Method of Operation	-	Recoilless chamber type
Loading	-	Singly by hand (breech)
Ammunition used	-	HEAT
Identification	-	Spotting rifle fitted on top of weapon; small protective shield on the left in front of the chamber.
Features	-	

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CLOSE-UP OF BREECH

YUGOSLAV 105mm
RECOILLESS RIFLE
M 65 →

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6. Viet Cong Hand Grenade (CONFIDENTIAL)

VC Hand Grenade LDR 31 (Confidential)

The VC Hand Grenade LDR 31 is crudely constructed of rolled sheet steel. It has a wooden cap with wax paper used as a sealer for water proofing. The grenade weighs 270 grams (9.5 ozs) with 42.5 grams (1.5 ozs) of powdered tritonal. It is cylindrical in shape 1.60 inches (40 mm) in diameter and 3.075 inches (78 mm) long.

The grenade is operated by removing the wooden cap, breaking the paper disc to gain access to the pull friction fuze string. The string is pulled which ignites a time fuze of approximately 5 seconds which in turn fires the non-electric detonator used to explode the grenade.

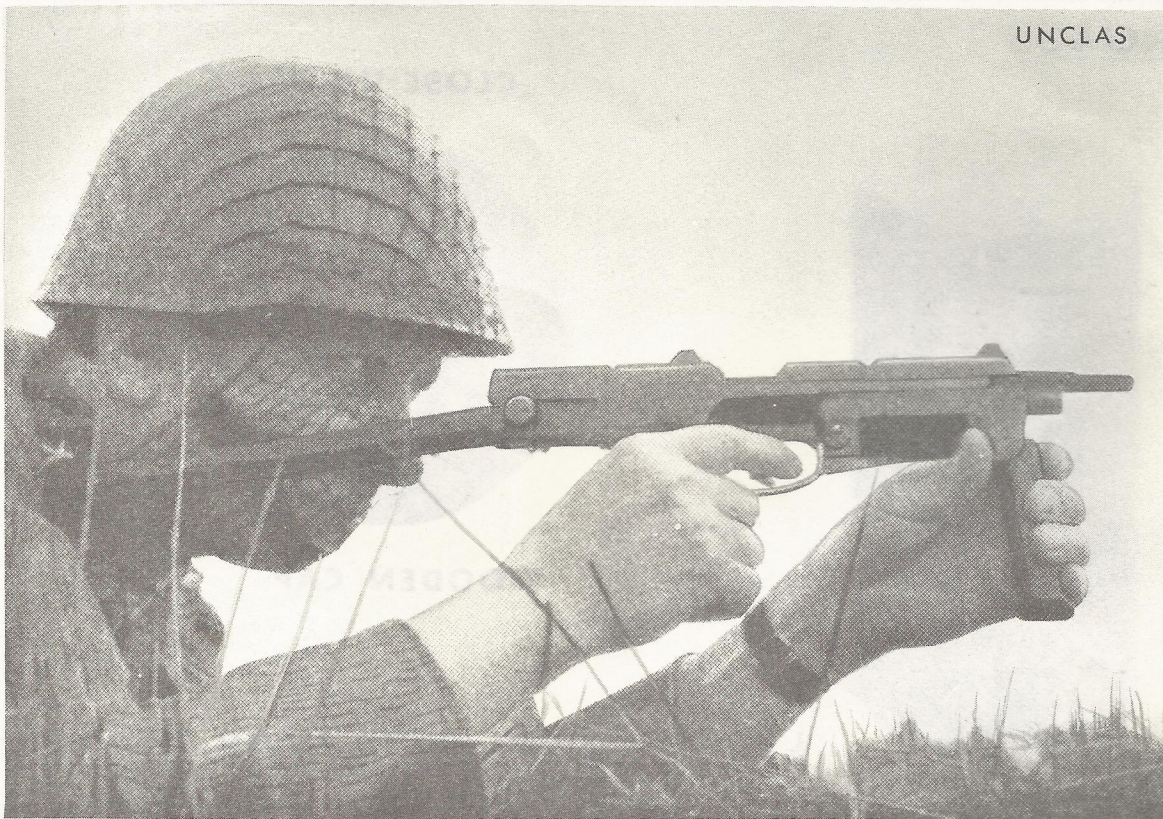


7. Polish Automatic Pistol (UNCLAS)

Polish Automatic Pistol "Model 63" (Unclassified)

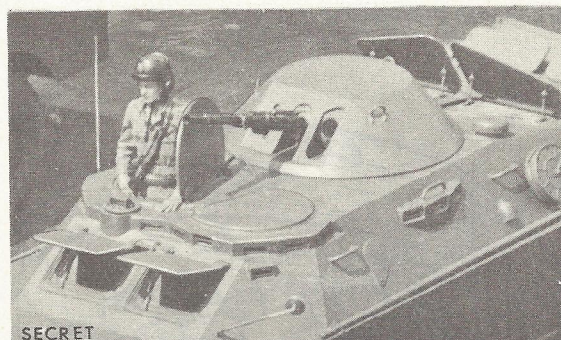
This pistol was developed to provide Company and Platoon Commanders as well as crews of combat vehicles with a weapon of greater fire power than the standard pistol. This pistol can fire automatic or single shots controlled by trigger pressure. It can be fired with one hand or, using the folding shoulder support, with both hands.

The Model 63 Pistol is of 9 mm calibre weighing 1.8 kg (4 lb) with a 25 round magazine. Its length is 333 mm (13.1 in) as a pistol and the muzzle velocity is 325 m/sec (1065 ft/sec). Soviet writings state that aimed fire is possible at 200 m (210 yds). Theoretical rate of fire is 600 rounds per minute. The pistol is designed to be carried in the folded condition in a holster.



Polish "Model 63" Automatic pistol in use

8. Soviet Machine Gun Turret (SECRET)



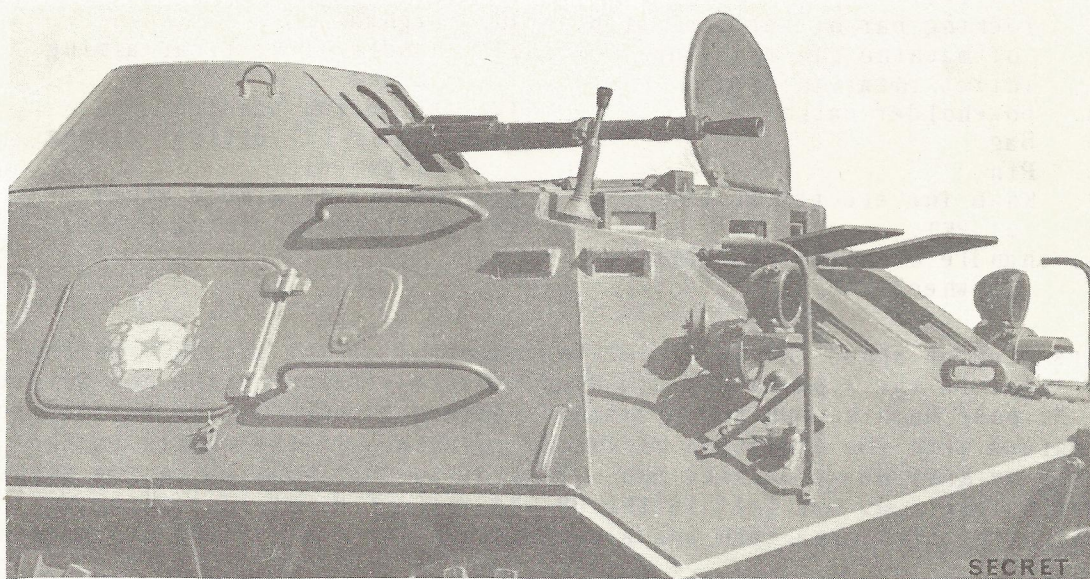
BRDM(2)

In 1966 a new version of the Soviet BRDM (Amphibious Armoured Reconnaissance Vehicle) appeared in the hands of Soviet troops in East Germany. In addition to moving the engine from front to rear, the Soviets had given the BRDM(2) an integral weapon system which the earlier vehicle lacked. In a truncated conical turret were mounted co-axially a 14.5 mm Heavy Machine Gun and a 7.62 mm Medium Machine Gun. No hatches or viewing ports were provided in the sides or top of the turret but a circular aperture to the left of the 14.5 mm HMG appeared to contain some optical device.

This same turret appeared in 1967 on the BTR-60PB giving the hitherto basically unarmed BTR-60P series of wheeled APCs a greater effectiveness against light armoured targets.

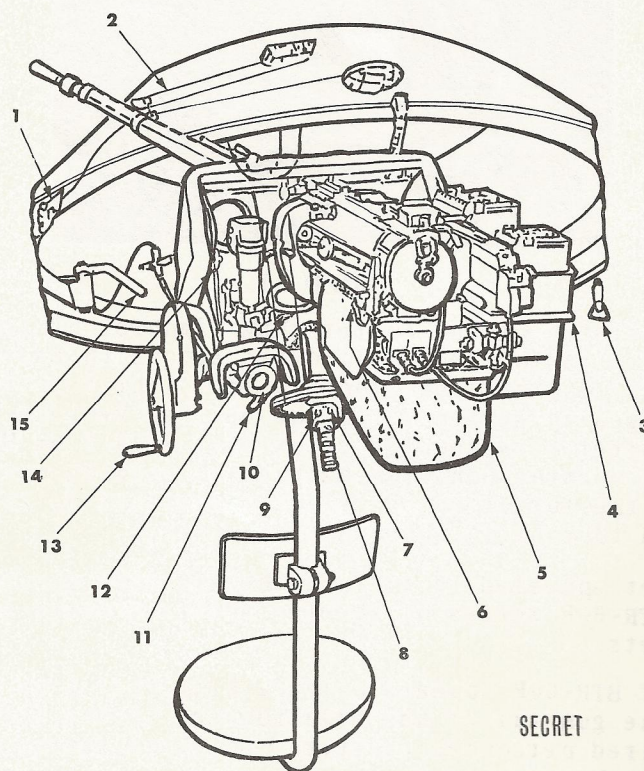
A photograph of BTR-60P appears on page 6 of Part I of ATIR No 87. More recently, the machine gun turret has been mounted by the Czechs on their massive OT-64B armoured personnel carrier. An illustration of this vehicle will be found in ATIR No 91 page 3.

Unusually, in this case, a hexagonal platform was inserted between the turret and vehicle roof - presumably to give clearance to the gun whilst traversing. The Soviets appear to have ignored this point and on both the BRDM(2) and the BTR-60PB it would be impossible to traverse the turret freely with the driver's and commander's hatches open and the infra-red searchlight mounted in position.



Raised Hatches preventing Turret from
being traversed properly

Soviet Machine Gun Turret (continued)



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Diagram of Interior of Turret

Legend

- | | |
|---|--|
| 1. electrical switchboard for turret. | 9. knot of electrical trigger of KPVT |
| 2. locking bar of vertical step of machine gun mounting | 10. sights |
| 3. turret rotation stop | 11. handle of vertical aiming brake |
| 4. box-holder catch | 12. reloading handles |
| 5. Bag | 13. handle of vertical aiming flywheel |
| 6. Pin | 14. handle of window wiper |
| 7. Knob for electrical trigger of PKT. | 15. horizontal aiming brake. |
| 8. handle of horizontal aiming flywheel | |

This diagram shows the layout of the interior of the turret. On the extreme right is the 7.62 mm PKT armoured vehicle version of the new Soviet PK General Purpose Machine Gun now becoming standard throughout the Warsaw Pact ground forces with the exception of Czechoslovakia. In the centre is the older 14.5 mm KPVT Heavy Machine Gun - similar to that mounted in the Soviet T-10M Heavy Tank. On the left is the PP-61A optical sight containing a simple sight graticule pattern and a range scale for each of the two weapons.

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Soviet Machine Gun Turret (continued)

Ammunition boxes are mounted to one side, but the ability of the KPVT to employ selective ammunition feed does not appear to have been used here. Gun elevation and depression and turret traverse are by hand and firing is electrically operated from the buttons on the elevating handwheel.

The gunner's seat is suspended from the turret roof and his methods of acquiring targets would appear to be either through his optical sight, the circular window in the turret in front of the sight, or by ducking down and looking through the embrasures in the vehicle sides. Alternatively he could be directed on to a target by the Commander.

Armour thickness of the turret is only 10.6 mm (0.41 in), whilst the slope of the armour is 48° in the front and 40° at the rear.

In Soviet tradition, the machine gun turret is simple and, in respect of its target acquisition and gun control equipment, rather crude. Nevertheless it allows both a medium and a heavy machine gun system to be easily mounted on any Warsaw Pact light armoured vehicle and gives a considerable increase in fire power.

Technical Data

Turret mounted on	:	BRDM(2), BTR-60PB, OT-64B		
Weight of complete turret	:	385 kg (850 lbs)		
Armament	:	14.5 mm (.55 in) KPVT HMG (max range : 2000 m) (2187 yds)		
	:	7.62 mm (.300 in) PKT HMG (max range : 1500 m) (1640 yds)		
Sight	:	PP-61A		
Sight magnification	:	2.6 x		
Traverse	:	360° (Note that the BRDM(2) and BTR-60PB have some limitation in traverse due to the Commander's hatch and infra-red lamp, see page 15 last paragraph)		
Elevation max	:	+30°		
Elevation min	:	-5°		
Ammunition	:	Nomenclature	Type	MV
	:	14.5mm		
	:	B-32	API	2700 fps
	:	BZT	API-T	2700 fps
	:	ZP	IT	2700 fps
	:	7.62mm		
	:	B-30	API	2760 fps
	:	B-32	API	2880 fps

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9. Motor Transport In Northern Climes

SOVIET COLD WEATHER DEVELOPMENTS (Secret)

The Soviets define 'Northern regions' as those parts of the USSR bounded to the south by an isotherm of -21°C for the mean January temperature. In addition there are many "warmer" areas where the air temperature drops to -40°C on occasions. The Soviets, therefore, have a real interest in improving the cold weather performance of their vehicles. Their approach to this problem has been one of continuing modification to standard vehicles rather than the development of wholly specialised vehicles. Their aim is to make the operation of MT a reality at temperatures down to -55°C .

A wide range of vehicles have been produced and are being evaluated at the prototype stage. These vehicles include modified versions of UAZ/GAZ, KRAZ, KAZ, MAZ, URAL, ZIL and BELAZ. Several are known to be in series production - notably the UAZ 452AS and the newer ZIL 130S, since 1965 and 1967 respectively.

The techniques listed in Table I have been used to varying degrees.

The end product of this R & D will be a range of vehicles with a capability of operating in temperatures down to -55°C .

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Typical example of simple engine protection
(URAL 375)

Motor Transport in Northern Climes (continued)

TABLE I
Cold-proof Techniques Used

1. Preheating of :
 - a. Coolant)
 - b. Lubricant) Using either a centralised system or independent
 - c. Fuel) systems integral to each vehicle normally
 - d. Carburettor) run off the same fuel as the vehicle.
2. Insulation of :
 - a. Cab
 - b. Engine compartment
 - c. Battery compartment
3. Fuel Systems improved by :
 - a. Increased bore of fuel lines
 - b. Fuel preheating
 - c. Use of special starting additives to standard gasolines
 - d. Use of fuel injection
4. Electrical Systems improved by :
 - a. Use of capacitor discharge ignition to reduce leakage
 - b. Use of heavy duty batteries
5. Coolant/Lubricant Systems improved by :
 - a. Use of sealed/pressurised coolant systems
 - b. Antifreeze
 - c. Special cold weather lubricants
6. Tyre Pressures
 - a. Cab control of inflation/deflation systems
 - b. Whitewall tyres to reduce pressure buildup caused by sunlight when the vehicle is static.

Motor Transport in Northern Climes (continued)

TABLE II

COLD PROOF VEHICLE - GASOLINE ENGINES

Vehicle	Payload (tons)	Wheel Arrangement	Electronic Ignition
UAZ-452AS	$\frac{3}{4}$	4 x 4	NO
GAZ 53S	4	4 x 2	YES
ZIL-130S	5	4 x 2	YES
ZIL-130VS	5	4 x 2	YES
ZIL-131	5	6 x 6	YES
ZIL-157	5	6 x 6	NO
ZIL-E-167	5	6 x 6	NO
ZIL-133	8	6 x 4	YES
URAL-375K	5	6 x 6	NO
URAL-377D	8	6 x 4	NO

TABLE III

COLDPROOF VEHICLES - DIESEL ENGINE

Vehicle	Payload (tons)	Wheel Arrangement	Remarks
MAZ-512	8	4 x 2	Cargo
KrAZ-256BS	10	6 x 4	Dump truck
KrAZ-219	12	6 x 4	Cargo
MAZ-525	25	4 x 4	Dump truck
BelAZ-540S	27	4 x 2	Dump truck
BelAZ-548	40	4 x 2	Dump truck
BelAZ-549	65	4 x 2	Dump truck

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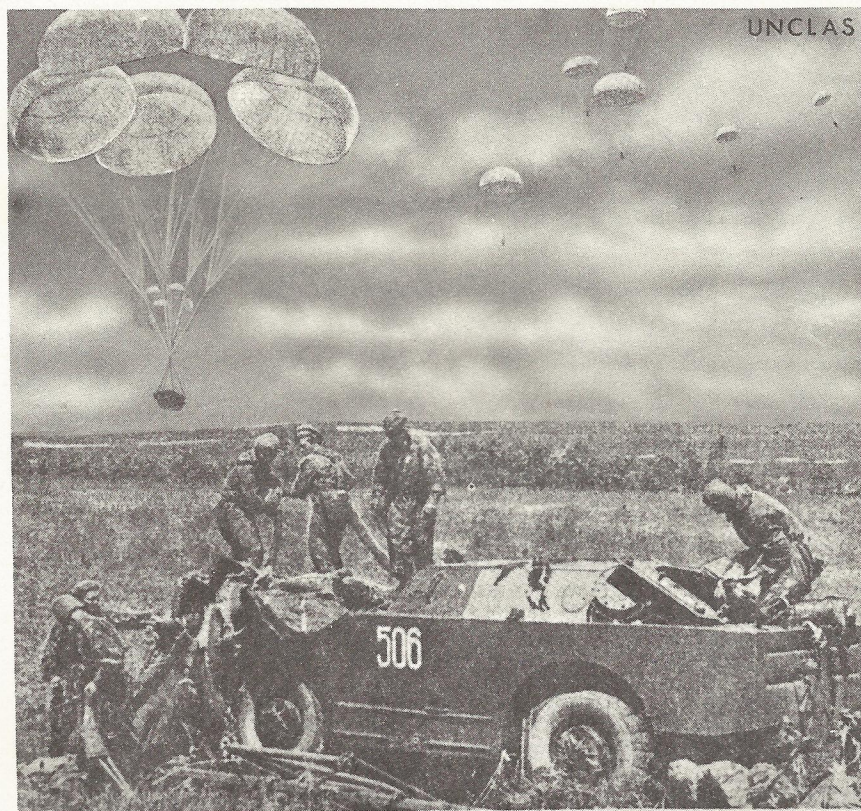
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10. Airdropping of BRDM by Soviets (CONFIDENTIAL)

A recent open press report with a photograph confirms that the Soviet airborne troops have dropped the BTR-40P (BRDM) armoured amphibious command and reconnaissance vehicle. The vehicle was dropped using five parachutes, each approximately 65 ft in diameter with an equal number of stabilizing parachutes. This is the first time that a five canopy system has been seen used by the Soviet to support the drop of heavy equipment.

It is thought that the platform used is the recently discovered PP-128-5000 which has a length of 16.4 feet and a width of 11.5 feet. The total weight of the rigged BRDM is estimated to be in excess of 7.5 tons. An article on the PP-128-5000 will be included in the next ATIR.



Soviet Heavy Drop showing BRDM in foreground

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11. FLAP WHEEL - FCE (AUSCANUKUS)

FLAPWHEEL - Air Defence Gun Fire Control Equipment

FLAP WHEEL is a fire control equipment for the 57 mm AA gun S60. It can replace the SON-9/PUAZO 6/60 combination. It has been introduced into East Germany during the last two years and is deployed with GSFG in at least six sites, mostly at or near airfields. East German forces are also beginning to receive the equipment. (Confidential).

It is in use with Soviet forces in Czechoslovakia and may appear in the other Warsaw Pact countries. It may in due course replace SON-9/PUAZO 6/60 completely. (Secret).

Technical Characteristics (Secret AUSCANUKUS)

RF : 9120-9270 MHz
PRF: 1805-2036 pps and 2120-2415 pps
PD : 0.2-0.5 μ sec
Beam width: 2° (est)
Scan: Circular, 5 secs per revolution
Sector, 2.5-4 secs/sector and 5-8 secs/sector
Conical, 24-28 cps
Polarisation : Rotating
Maximum Ranges (ideal conditions): Detection 60 kms) (37.25 miles)
Tracking 40 kms) (Est) (24.8 ")

Special Features (Secret)

- a. MTI is thought to be incorporated.
- b. An ECCM capacity is suspected the most likely modes of which are:
 - (1) RF switching
 - (2) PRF variations.
- c. An integral IFF interrogator (ROD MAT) is incorporated, and is probably similar to FOIL TWO (Fitted to SON-9a).
- d. An optical tracking system is fitted, believed to be TV.
- e. An infra-red acquisition or tracking mode is suspected.

Possible Modes of Operation (Secret)

- a. Radar Acquisition. FLAP WHEEL has rarely been seen deployed with an acquisition radar. While the circular and sector scan undoubtedly provides a measure of acquisition, these alone are unlikely to be effective especially against low flying aircraft. The best low level acquisition radar is SQUAT EYE, but the 32 metre mast would not be a welcome addition to an AA battery

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FLAP WHEEL (continued)

site. It is possible that acquisition data is transmitted over an RL-30 data link with DRY RACK/HAT RACK antennae from remote radar stations via the air defence sector HQ.

b. Optical Acquisition. A device resembling a modified TZK high angle telescope has been seen deployed with FLAP WHEEL. This is believed to have coarse azimuth and elevation magstrip transmitters incorporated so that the FLAP WHEEL antenna can be slaved to it. If this is similar to the normal TZK, its main characteristics will be:

- (1) Magnification : x 10
- (2) Field of View: 124.3 mils (7°)

c. Other acquisition means. TV or infra-red acquisition may be possible. If incorporated, they will probably be secondary.

d. Tracking

- (1) Normal radar tracking (conical scan).
- (2) TV tracking (probable).
- (3) Infra-red tracking (possible).

Recognition features : (Confidential)

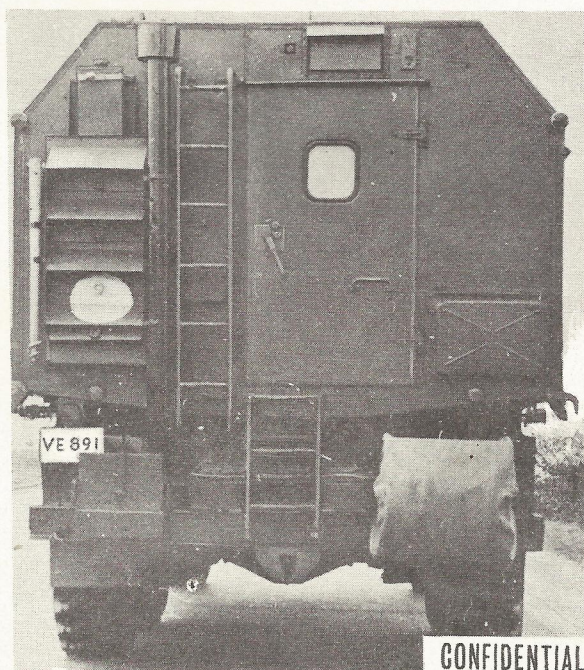
- 1. Prominent white canvas covered "horns" mounted on the front of the box-body over the cab.
- 2. Cable drum at right rear.
- 3. In action, parabolic antenna with large centre radiator, the face of which is divided at the diameter into light and dark halves. A telescopic device, believed to be a TV camera is mounted above the paraboloid with an IFF antenna beside it.
- 4. A possible generator is mounted on the forward right hand side of the van which is uncovered when in action.

FLAP WHEEL (continued)



IN
ACTION

SIDE
VIEW



REAR
VIEW

CONFIDENTIAL

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FLAP WHEEL (continued)

General Assessment (Secret AUSCANUKUS)

The production of an entirely new AA fire control equipment signifies more than a desire for frequency diversity and the advantage of X-band. This could have been achieved by modifying SON-9. FLAP WHEEL is undoubtedly a significant improvement over previous fire control systems and is probably capable of more accurate tracking and prediction and has a variety of tracking modes which, together with its ECCM capacity, makes it less susceptible to interference.

COLLECTION REQUIREMENTS (Confidential)

1. Details and photography of the antenna system, especially feeds or cables to the centre radiator, the telescope and the White Cross seen at 11 o'clock on the face of the paraboloid.
2. Details of the antenna scan including size of arcs and time for each cycle.
3. Identification of associated equipment (eg FLAT FACE/ SQUAT EYE, DRY RACK/HAT RACK, generators etc).
4. Details and photography of the right side of the box-body when in action to include especially the possible generator.
5. Details of time and location of each sighting.

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12 - ARMY TECHNICAL INTELLIGENCE REVIEW (SECRET)

RUNNING INDEX

ARMoured FIGHTING VEHICLES

APCs

BTR-152	87(1)/4
BTR-152U	87(1)/4
BTR-40	87(1)/5
BTR-50P	87(1)/5
BTR-60P	87(1)/6
BTR-60PB	87(1)/6; 89(2)/10; 95/15
BTR-60PK	87(1)/6
BRDM	92/5
BRDM(2)	89(2)/9; 92/6; 93/11; 95/15
OT-64 (CZECH)	91/3; 94/4
OT-64 (POLISH)	91/3
OT-64B	91/3; 94/5; 95/15
OT-62 (TOPAS)(CZECH)	94/3
AAICV M1967(?)	88(2)/20; 93/10; cc
FUG (OT-66)	93/cc
Chi com APC	93/cc

Tanks

KV-1	89(1)/3
KV-2	89(1)/3
KV-85	89(1)/3
JS-1	89(1)/4
JS-2	89(1)/4
JS-3	89(1)/4
A-20	88(1)/3
T-10	89(1)/5
T-10M	89(1)/5; 93/cc
T-32	88(1)/3
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T-34/85	88(1)/4
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T-54	88(1)/5; 93/25
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T-54 with Czech Mine Clearing Roller	87(2)/14
T-55	88(1)/6; 89(2)/10n; 91/68; 93/25
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T-62	88(1)/7; 93/3, 25, cc
T-64(?)	93/cc
PT-76	92/3
Chi com Type 59	93/4, cc
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PAZ Atomic Defence System	91/68

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ARMoured FIGHTING VEHICLES (continued)

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122-mm HEAT Round	93/8

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SU-100 M1968(?)	93/9

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100-mm Anti-Tank Gun M1965(?)	91/cc 22

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AIR DEFENCE

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ZPU-2 Twin 14.5-mm AA Heavy Machine Gun	90/5
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ZU-23 Twin 23-mm AA Gun	88(1)/13; 90/6
ZSU-23-4 Quad 23-mm SP AA Gun M1965(?)	88(1)/13; 90/6; 93/cc
57-mm AA Gun S-60	87(2).6; 88(1)/13; 90/7
ZSU-57-2 57-mm Twin SP AA Gun	90/7

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BM-13 132-mm RL (16 Rds)	87(1)/10
BM-14-16 140-mm RL (16 Rds)	87(1)/11
140-mm RL (16 Rds) Towed M1965(?)	87(1)/11
BM-24 240-mm RL (12 Rds)	88(1)/14

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ARTILLERY (continued)

FREE ROCKETS OVER GROUND

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FROG 2	89(1)/7
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Austrian STEYR-PUCH 700AP 'HAFLINGER'	88(1)/20
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INFANTRY WEAPONS

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9-mm Pistol MAKAROV (PM)	88(2)D/33
9-mm Pistol STECHKIN (APS)	88(2)D/34
Hungarian 7.62-mm Pistol M-48	88(2)D/32
Czech 7.62-mm Pistol Model 52	88(2)D/35
Czech 7.65-mm Machine Pistol SKORPION M-61	88(2)D/36
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INFANTRY WEAPONS (continued)

Pistols (continued)

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CCA Pistol Type 64	91/9
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7.62-mm Sub-machine Gun SHPAGIN PPSH M1941	88(2)D/38
7.62-mm Sub-machine Gun SUDAYEV (PPS M1943)	88(2)D/39
Hungarian 7.62-mm Sub-machine Gun M48	88(2)D/38
Czech 9-mm Sub-machine Gun Models 23 and 25	88(2)D/40
Czech 7.62-mm Sub-machine Gun Models 24 and 26	88(2)D/41
CCA 7.62-mm Sub-machine Gun Type 50	88(2)D/38
CCA 7.62-mm Sub-machine Gun Type 54	88(2)D/39

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7.62-mm Semi-automatic Carbine SIMONOV (SKS)	88(2)D/45; 93/18
7.62-mm Semi-automatic Sniper Rifle DRAGUNOV(SVD)	87(2)/13, cc; 88(2)D/46; 92/9
7.62-mm Assault Rifle KALASHNIKOV (AK-47/AK)	88(2)D/48; 92/7; 93/17
7.62-mm Assault Rifle KALASHNIKOV (Modified)(AKM)	88(2)D/49; 92/8
Hungarian 7.62-mm Rifle M48	88(2)D/44
Hungarian 7.62-mm Assault Rifle AK	87(1)/12; 88(2)D/48
Hungarian 7.62-mm Assault Rifle AKM	88(2)D/50
Czech 7.62-mm Semi-automatic Rifle Models 52 and 52/57	88(2)D/47
Czech 7.62-mm Assault Rifle M-58p	88(2)D/51
Czech 7.62-mm Assault Rifle M-58v	88(2)D/51
East German 7.62-mm Carbine S	88(2)D/45
East German 7.62-mm Assault Rifle MPiK	88(2)D/48
East German 7.62-mm Assault Rifle MPiKms	88(2)D/48
East German 7.62-mm Assault Rifle MPiKM	88(2)D/49
Polish 7.62-mm Assault Rifle PMK/PMK-DGN	88(2)D/48; 93/15
CCA 7.62-mm Carbine Type 56 (M21)	88(2)D/45; 93/18
CCA 7.62-mm Assault Rifle Type 56 (M22)	88(2)D/48; 93/17
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7.62-mm Light Machine Gun DEGTYAREV (DT and DTM)	88(2)D/56
7.62-mm Light Machine Gun DEGTYAREV (RPD)	88(2)D/57; 93/18
7.62-mm Light Machine Gun (RPK)	88(2)D/58; 92/9
7.62-mm Company Machine Gun (RP-46)	88(2)D/60
7.62-mm General Purpose Machine Gun PK/PKS/PKT	88(2)D/61; 90/4; 92/10,11
7.62-mm Heavy Machine Gun GORYUNOV (SG-43) and (SGM)	88(2)D/62
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Czech 7.62-mm Light Machine Gun M-52/57	88(2)D/59
Czech 7.62-mm General Purpose Machine Gun M-59, M-59L, M-59N	88(2)D/64
CCA 7.62-mm Light Machine Gun Type 56 (M23)	88(2)D/57; 93/18
CCA 7.62-mm Company Machine Gun Type 58	88(2)D/60
CCA 7.62-mm Heavy Machine Gun Types 53 and 57	88(2)D/62
CCA 12.7-mm Heavy Machine Gun Type 54 (M17)	93/19

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INFANTRY WEAPONS (continued)

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82-mm Mortar - Chemical Time Fuze	91/7
CCA 82-mm Mortar Type 53 (M10)	93/19

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Defensive Hand Grenade RGD-5	88(2)D/69
Defensive Hand Grenade RG-42	88(2)D/70
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Anti-Tank Hand Grenade RPG-43	88(2)D/75
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Smoke Hand Grenade RGD-1	88(2)D/78
Smoke Hand Grenade RGD-2	88(2)D/79
Czech Offensive Hand Grenade RG-4	88(2)D/72
East German Smoke Hand Grenade S-32	88(2)D/80
Polish Anti-Personnel Rifle Grenade F-1/N60	88(2)D/81; 93/16
Polish HEAT Rifle Grenade PGN-60	88(2)D/82; 93/16
CCA Defensive Hand Grenade Type 1	88(2)D/68
CCA Defensive Hand Grenade Type ?	88(2)D/69
CCA Defensive Hand Grenade Type 42	88(2)D/70
CCA Defensive Stick Type Serrated Oval Head Hand Grenade Type ?	88(2)D/73
CCA Anti-Tank Hand Grenade Type ?	88(2)D/76
Viet Cong Hand Grenade LDR 31	95/13

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Anti-Tank Grenade Launcher RPG-2	88(2)D/85; 93/19
Anti-Tank Grenade Launcher RPG-7	88(2)D/86; 89(2)/3; 93/13
New Anti-Tank Weapon B-1968(?)	93/13, cc; 95/10
82-mm Recoilless Anti-Tank Gun B-10	88(2)D/90; 93/13
107-mm Recoilless Anti-Tank Gun B-11	88(2)D/91
Czech Anti-Tank Grenade Launcher PANCEROVKA P-27	88(2)D/87
Czech 82-mm Recoilless Anti-Tank Gun TARASNICE T-21	88(2)D/92
Czech 82-mm Recoilless Anti-Tank Gun M-59 and M-59A	88(2)D/92
CCA Anti-Tank Grenade Launcher Type 56 (M7)	88(2)D/85; 89(2)/3; 93/19
CCA 57-mm Recoilless Rifle Type 36	88(2)D/88
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INFANTRY ANTI TANK WEAPONS (continued)

Yugoslav 82 mm Anti Tank Gun M-60	95/9
Yugoslav 105 mm Recoilless Rifle M65	95/11
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93/36

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SCUD A	87(2)D/27, 56
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SCUD B (Wheeled Chassis)	87(2)D/29; 88(2)/cc
SCUD (Semi-Trailers)	87(2)D/30
SCUD Trainer	87(2)D/31
SS-12 New Tactical Ballistic Missile)	(87(2)D/31, 61; 88(2)/17, cc
SCALEBOARD	(89(2)/4, cc
SALISH	87(2)D/34, 62; 93/29
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SNAPPER on GAZ-69	87(1)9, 87(2)D/41, 66; 88(1)/23; 91/65
SNAPPER on BRDM	87(2)D/40, 66; 88(1)/23; 91/65
SWATTER 1	87(2)D/42, 68; 88(1)/24
SWATTER 2	91/cc/21
SAGGER	87(2)D/45, 70; 88(1)/25; 93/3
SAGGER - Man-Portable	87(2)D/47; 88(1)/25; 92/12

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SA-2 (GUIDELINE)	87(2)D/50, 72; 88(2)/18; 89(2)/5
SA-3 (GOA)	87(2)D/53, 76
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Viet Cong Directional Fragmentation Mine	
DH3 (Round)	92/20
Viet Cong Directional Fragmentation Mine	
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Viet Cong Directional Fragmentation Mine DH5	92/20
Viet Cong Directional Fragmentation Mine DH10	87(1)/20; 92/20
Viet Cong River Mine	92/22
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Czech Anti Personnel Mine PPMiD	95/8

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TMM Lorry Mounted Bridge	89(1)/16; 93/27
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NUCLEAR, BIOLOGICAL & CHEMICAL WARFARE

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NUCLEAR, BIOLOGICAL and CHEMICAL WARFARE (continued)

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NUCLEAR, BIOLOGICAL AND CHEMICAL WARFARE (continued)

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AIRBORNE

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